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cus, and in the entire absence of a stylopodium. In *Eulophus* the carpels are decidedly dorsally flattened, the seed-face has a broad and shallow concavity, and there is a conical stylopodium. *Donnellsmithia* differs from *Museniopsis* in its tall and slender caulescent habit, foliage characters, the absence of a stylopodium, and its more flattened carpels. In fact, the low depressed acaulescent habit of *Museniopsis*, and its foliage are strikingly different from the new genus.

EXPLANATION OF PLATE II.—Fig. 1, the whole plant; fig. 2, a single umbellet; fig. 3, a single fruit; fig. 4, cross-section of the fruit, in which, however, the pericarp is too thick.

Crawfordsville, Indiana.

Leo Lesquereux.¹

Four names will ever stand first in the list of American bryologists, those of Sullivant, Lesquereux, James and Austin. The last of the four passed away on the 25th of October last. Sullivant in 1873, Austin in 1880, James in 1882, Lesquereux in 1889—so the sad list of our losses runs. Not only as the pioneers in bryology will the names be associated; the four were, and will be in memory, linked together in common study. From 1848 till Sullivant's death, Lesquereux and he, living in the same town, were most intimately associated in the study of mosses. Sullivant assisted Austin in the determination and issuing of the *Musci Appalachiani*. Finally Lesquereux called to his aid James in the preparation of the *Manual of the Mosses of North America*.

Of the four Lesquereux reached the most advanced age. He was born at Fleurier, Neuchâtel, Switzerland, November 18, 1805, just five years, therefore, before our own Gray. His parents were of Huguenot lineage and educated their son for the church. This plan, however, was interfered with by lack of means, and at nineteen the young man was forced to earn his own money by teaching French. At twenty-four he became principal of the college La Chaux-de-Fonds in the canton of Neuchâtel, but two years later lost his hearing to such an extent that he was obliged to give up this place. To sup-

¹It is not fitting that the labors of so eminent a botanist should go unnoticed in the GAZETTE. Efforts have been made to have this sketch written by hands better fitted to the task, but their preoccupation has devolved it upon one of the editors (B.), who perforce dwells chiefly on his bryological work.

port himself he took up the trade of an engraver of watch cases and maker of watch springs. He must have devoted all of his spare time to researches among the mosses and particularly the peat swamps, for in 1844 he presented to the local society a memoir entitled, "Quelques recherches sur les marais tourbeux en général"—a work of 140 quarto pages—and a year later a "Catalogue des mousses de la Suisse" of 54 quarto pages. In 1845 he was commissioned by the Prussian government to study the peat formation in northern Europe.

In 1848 he came to the United States and settled at once in Columbus, Ohio, where he resided until his death. His study of the formation of peat naturally led him to take an interest in the plants which grew in the geologic peat bogs, and it is easy to trace the lines of divergence of his two chosen subjects. Of his studies among the fossil plants we have not knowledge to speak, further than to say that in this field he was an acknowledged authority, and it was the one which he most loved and was able longest to pursue.²

Lesquereux soon became acquainted with Sullivant at Columbus, and was employed by him to make a collecting tour through parts of the Southern states. The mosses which were thus accumulated, together with many others, were issued in 1856 under the title "Musci Boreali-Americani," and numbered 416 species and varieties. Of this, as well as of the second edition, which appeared in 1865 and numbered nearly 500 species, there were only 50 copies. In 1859, in conjunction with Sullivant, he published in the Proceedings of the American Academy (iv. 275-282) "Characters of some new Musci collected by Charles Wright in the North Pacific Exploring Expedition under the command of Commodore John Rodgers." The work itself, and the plates which were prepared for the government, have never been published.

Mr. Henry N. Bolander, a resident of Columbus, removed to San Francisco early in the 60's, and sent in a wealth of new material from California. Based on this, Lesquereux published, in 1863, in the Trans. Amer. Phil. Soc. (xiii. 1-24) a paper "On California Mosses," in which many new species were described. Five years later he prepared the "Catalogue of Pacific Coast Mosses," which appeared as the first of the Memoirs of the California Academy of Sciences.

²Professor Lester F. Ward read a paper before the Geological Society at New York in the holidays, which will deal with this portion of Lesquereux's work. The paper is to be published in the *American Geologist*, and from it we shall hope to be able to present some extracts later.

In 1872 his sight partially failed him through excessive use of the microscope in the examination of *Orthotricha*. The next year his friend Sullivant died. At this time the two were preparing for the publication of a manual of mosses of North America. The loss of sight and the loss of the principal in the movement well-nigh stopped the production of the book, and probably would have done so had not interested friends urged its completion. Lesquereux therefore called in the aid of Mr. Thomas P. James, and under his hand was continued most of the microscopic work. While this was doing Lesquereux prepared the larger part of the letter-press of the *Supplement to the Icones Muscorum* of Sullivant from the notes left by the latter in his herbarium; but firmly declined to have his name appear on the title page of the work. In 1879, with James, he published in the *Proc. Amer. Acad.* (xiv. 133-141) descriptions of a number of new species of mosses. In 1882 James suddenly died, and again the long-expected manual seemed blocked. On account of failing health Lesquereux was unable to press the work to completion and a large share of the editorial work was done by Dr. Sereno Watson. The work appeared in 1884.

From this time Lesquereux wholly gave up his bryological studies. His bryological books, herbarium and manuscript notes on all the mosses he had examined were presented to the Museum at Neuchâtel, a gain to that institution not at all commensurate with the loss to this country.

Lesquereux was quite conscious of his failing powers, and it was often put to his friends in a very pathetic way in his letters. In 1886 he wrote in response to some expression about his welfare: "Allow me to thank you for your interest in my health. I have an incurable sickness—old age. I can still work on fossil botany, but can not do much." About two years ago he suffered a stroke of paralysis, which gradually increased in extent until death came to his release.

The following items regarding his family are from the *Columbus Daily Press*, to which we are also indebted for some of the facts above:

"He was married in 1830, and his wife was a highly born lady of Eisenbach, Saxe-Weimar, Baroness Sophia von Walffskeel, daughter of General von Walffskeel. In religion Lesquereux was a Reformed Protestant, or Lutheran. The whole world has been benefited by his labors. Although residing in this city for many years, he was known to com-

paratively few, and his ability can hardly be said to have been appreciated here. All who knew him held him in high esteem, as he was uniformly kind, courteous and charitable. He leaves three sons and one daughter, two of the sons, F. A. and Leo Lesquereux, living in this city, and H. C. Lesquereux in Springfield, Mass. His daughter is Mrs. Anna Earhart, widow of Edmunds Earhart, of Marion township."

Lesquereux's retiring disposition prevents us from knowing the full extent of his labors, and, perhaps, the full extent of his worth. It is safe to rank him, however, as the second bryologist of this country. The country of his adoption shares his fame with the country of his birth. His name is worthy of a place with those of his warm friends, Agassiz and Guyot.

BRIEFER ARTICLES.

Double flowers of the *Epigaea repens*.—This species attracted the attention of botanists several years ago by its polymorphous stamens and pistils, and its tendency to diœciousness. It occasionally indulges in the freak of putting forth double flowers. One locality where these are produced year after year is at Plymouth, N. H. The flowers sent for examination from this place were large, deep pink in color, and with their numerous petals, much prettier than the ordinary single ones. There was great variation in the degree of transformation of stamens to petals. Three-fourths of the number of flowers examined had two circles of five petals each, the inner alternate with the outer, and five stamens alternate with the inner petals. The outer circle formed the normal salver-shaped corolla with ovate lobes, but the inner was composed of five distinct and very unequal petals with the margins irregularly indented or toothed. The filaments of the stamens were broadened towards the top, as if on the point of expanding into a blade, and bore imperfectly developed brownish anthers which rarely contained any pollen. In other flowers considerable variation in the degrees of cohesion and adhesion was observed. It was not infrequent to find two short-formed stamens adherent to the base of an inner petal.

In a few, more double flowers, the transformation of the ten stamens to petals was nearly complete, forming three circles which showed all stages of transition from a narrowly spatulate form suggestive of a broadened filament without the anther, to a perfectly formed petal. A noticeable feature in these cases was the cohesion of two or more, rarely of three, petals of the inner circles, pointing to the formation of an inner corolla tube.

The most curious change of all had taken place in the pistil, which